already used some fast signalling in the immediate past in which case it may presume that it is allowed to use the same multiple access information again. The alternative is that the mobile station must ask the base station for such information according to step 506. When enough information is available, the mobile station may start using the fast signalling process according to step 507.

Steps 503 and 507 may also be executed partly. In a situation where the mobile station has a relatively large amount of fast signalling to transmit, or where there are several parallel bearers active between a mobile station and base station simultaneously and fast signalling must be transmitted regarding at least two of them, it may happen that some of the capacity originally allocated for an active communication connection in the reverse direction can be used for the purposes of fast signalling instead, while the rest of the fast signalling must be made through a non-dedicated fast signalling channel.

Next we will describe an arrangement according to an embodiment of the invention. Fig. 6 illustrates, on the left side, a radio access network (RAN) 601 the main components of which are a radio network controller (RNC) 602 and at least one base station (BS) 603, of which the former is coupled to control and communicate with the latter. Terminology varies from one cellular radio system to another so that for example a unit corresponding to the RAN may also be known as the base station subsystem (BSS), a unit corresponding to the RNC may also be known as the base station controller (BSC) and a unit corresponding to the BS may also be known as the base transceiver station (BTS). In the hierarchy of the cellular radio system, above the RAN there is the core network (CN) where the RNCs communicate mainly with mobile switching centres (MSC; not shown in fig. 6). Below the RAN there are the mobile stations (MS) 604 so that a mobile station is arranged to communicate with at least one base station.

The right side of fig. 6 illustrates schematically some functional parts of the RNC, the BS and the MS. The main functions of an RNC are to act as a central hub in all communications within the RAN and from the RAN to the CN, to administrate the allocation of radio capacity at each base station and to perform overall control functions. For routing the communication connections the RNC comprises a transmission and cross-connecting unit 611. A processing and control entity 612 is arranged to control the operation of the transmission and cross-connecting unit 611. Further coupled to the processing and control entity 612 there is a memory 613. The base station comprises also a transmission and cross-connecting unit 621 for coupling it to the internal communications network of the RAN, as well as a

processing and control entity 622 and a memory 623. The transmission and cross-connecting unit 621 is also coupled to a radio frequency transmitter and receiver unit 624 for implementing the radio interface towards the mobile stations. A radio frequency transmitter and receiver unit 631 acts as the counterpart of the radio frequency transmitter and receiver unit 624 of the base station and communicates with the baseband and user interface parts 632 of the mobile station. A processing and control entity 633 and a memory 634 are also present in the mobile station.

According to the invention, the RNC 602 is arranged to reserve from the radio capacity allocation scheme of each base station some reverse direction capacity for the needs of fast signalling. This part of the arrangement according to the invention is most straightforwardly implemented by writing a corresponding instruction into the computer program that is stored in the memory 613 and that the processing and control entity 612 executes in performing its allocation tasks. Writing such an instruction into a computer program is as such within the capabilities of a person skilled in the art.

Similarly according to the invention the base station 603 is arranged to receive fast signalling messages within the reverse direction capacity allocated by the RNC 602 or in association with other uplink transmissions from the mobile stations, to demodulate and decode the received fast signalling messages and to respond to the received, demodulated and decoded fast signalling messages in an appropriate way, be it the setting of an antenna phase shift into a desired value or any other action that the mobile station desired that sent the fast signalling message. The base station 603 is also arranged to announce to the mobile stations within its cell the location, within the radio capacity allocation scheme, of the radio capacity dedicated to fast signalling. This part of the arrangement according to the invention is most straightforwardly implemented by writing corresponding instructions into the computer program that is stored in the memory 623 and that the processing and control entity 622 executes in performing its tasks in controlling the operation of the radio frequency transmitter and receiver unit 624. Writing such instructions into a computer program is as such within the capabilities of a person skilled in the art.

Further according to the invention the mobile station 604 is arranged to detect the need for transmitting fast signalling and to generate and transmit the fast signalling as needed. Again this part of the arrangement according to the invention is most straightforwardly implemented by writing corresponding instructions into the computer program that is stored in the memory 634 and that the processing and control entity 633 executes in performing its tasks in controlling the operation of the

radio frequency transmitter and receiver unit 631. Writing such instructions into a computer program is as such within the capabilities of a person skilled in the art.

In the foregoing we have primarily referred to fast signalling in the direction from the mobile station(s) to a base station. At the priority date of this patent application it is regarded as the most probable area of application of fast signalling, because most communication connections that have asymmetric capacity requirements will probably be asymmetric in that way that the majority of information to be communicated comes from the base station to the mobile station. However, the invention is not limited to the applicability of fast signalling in the uplink direction. It is well possible to define a fast signalling channel in the downlink direction to be used for such fast signalling that accompanies a major flow of information in the uplink direction. For example, a number of mobile stations capable of packet-switched reception in a cell may be ordered to listen to a certain cyclically occurring timeslot in the frame structure used in the cell where the mobile stations are currently operating. The main purpose of such ordering may be that the mobile stations are ready to receive packets belonging to a packet-switched communication connection in the assigned timeslot. In the absence of such packets the same timeslot may be used for fast signalling in the downlink direction, because the mobile stations are listening to that timeslot anyway and no new allocations need to be made.

The exemplary embodiments of the invention presented in this patent application are not to be interpreted to pose limitations to the applicability of the appended claims. The verb "to comprise" is used in this patent application as an open limitation that does not exclude the existence of also unrecited features. The features recited in depending claims are mutually freely combinable unless otherwise explicitly stated.